

**NATURAL RESOURCES CONSERVATION SERVICE
CONSERVATION PRACTICE STANDARD**

AMENDMENTS FOR TREATMENT OF AGRICULTURAL WASTE

(AU)

CODE 591

DEFINITION

Treatment of manure, process wastewater, storm water runoff from lots or other high intensity areas, and other wastes, with chemical or biological additives.

PURPOSE

To alter the physical and/or chemical characteristics of the waste stream to facilitate the implementation of a waste management system to:

- Improve or protect air quality
- Improve or protect water quality
- Improve or protect animal health
- Alter the consistency of the waste stream to facilitate implementation of a waste management system

CONDITIONS WHERE PRACTICE APPLIES

This practice applies where the use of a chemical or biological amendment will alter the physical and chemical characteristics of the waste stream as a part of a planned waste management system. This practice does not include amendments added to the animal feed.

CRITERIA

General Criteria Applicable To All Purposes

Laws, Rules and Regulations. Use of amendments as a part of a waste management system shall be planned and implemented to meet all Federal, state, and local laws, rules and regulations. The Alabama Department of Environmental Management (ADEM) Rules require amendments used to treat animal wastes to meet ADEM requirements prior to use in order to ensure groundwater and surface water quality. This will

require the submission of detailed Material Safety Data Sheets, chronic and acute toxicity testing, and other documentation as needed to ensure that the product is not toxic or hazardous and use of the product will be protective of the environment and aquatic resources.

Labeling and Instructions for Use. Products to be used as manure amendments shall be labeled or accompanied by instructions containing the following information as a minimum:

- Active ingredients and their percentage of the whole (proprietary terminology may be used as long as the actual chemical and/or biological names are included)
- The purpose(s) for which the amendment is intended
- Recommended application rate(s) to achieve the intended purpose(s)
- Maximum application rate(s) that will ensure the protection of water quality and aquatic resources
- Application timing and methodology to optimize the effectiveness of the amendment
- Incorporation requirements (if any)
- Special handling and storage requirements for the amendment
- Any safety concerns relating to the use of the amendment and recommended measures to overcome the safety concern, including any required personal protective equipment

Validation of Product. The species-specific rate, timing and application methodology of an amendment to achieve a needed level of treatment addressing a specific purpose must be documented by a university or other independent research entity acceptable to the NRCS. Documentation from peer reviewed journals is preferable. The effectiveness

of the amendment under different climatic factors shall be included in the documentation, or if there are no difference in effectiveness, the documentation shall so state. Potential adverse impacts of the amendment on groundwater and/or surface water quality and the ecosystem shall also be identified in the documentation. It shall be the responsibility of the amendment provider to furnish the documentation to the NRCS.

Application of Product. The amendment shall be applied according to manufacturer recommendations with a rate, method, and timing that will meet the intended purpose.

Land Application of Treated Wastes. Animal wastes treated with an amendment shall be tested to determine the effect of the amendment on the nutrient content of the wastes. Testing and land application shall be according to the Alabama NRCS conservation practice standard Nutrient Management, Code 590.

CONSIDERATIONS

The use of an amendment may alter the composition of the waste stream. The use of amendments should be limited to situations where impacts of the altered waste stream on other aspects of the planned system have been identified.

Some amendments have been shown to affect multiple purposes of this standard and other aspects of a livestock production operation. Preference should be given to amendments with the greatest environmental and economic benefit.

The use of amendments to reduce ammonia and other emissions from manure in confined spaces may allow altered ventilation strategies at an appreciable energy savings. The reduction of ammonia emissions will also increase the proportion of nitrogen in the manure.

PLANS AND SPECIFICATIONS

Plans and specifications shall be prepared in accordance with the criteria of this standard and shall describe the requirements for applying the

practice to achieve its intended purpose(s). Specifications for the use of an individual amendment will be developed in accordance with the label directions and other instructions provided by the vendor. As a minimum, the plans and specifications shall provide the following:

- The name of the amendment, the purpose(s) for its use, and the planned outcome(s)
- Application methodology, including rates, timing, mixing instructions, temperature requirements, etc
- Required tests to determine the effectiveness of the amendment as appropriate
- Required tests to ensure that proper use of the product will be protective of water quality and aquatic resources

OPERATION AND MAINTENANCE

A site-specific operation and maintenance (O&M) plan shall be developed and reviewed with the operator and owner prior to implementation of the practice. The O&M plan shall be consistent with the purposes of the practice, safety considerations, and label directions and other instructions provided by the vendor.

The O&M plan shall provide sufficient detail as to amendments to be used, application rates and timing, and equipment to be used.

The O&M plan shall detail all safety precautions necessary when handling the specific chemicals or biological amendments to be used.

The O&M plan shall provide for record keeping in sufficient detail to describe the amendment's use, actual application rates and timing, and any tests performed (including nutrient analysis).

REFERENCES

ADEM Administrative Code, Chapter 335-6-7, as amended (AFO/CAFO Rule)

Alabama NRCS Conservation Practice Standard
[Nutrient Management - Code 590](#)